

DOCUMENT RESUME

ED 172 457

EA 011 902

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 TITLE Organizational Careers in Public School Administration.
 PUB DATE 12 Jan 78
 NOTE 27p.; Paper presented at the Annual Meeting of the American Sociological Association (San Francisco, California, September 4-8, 1978)

EDRS PRICE MF01/PC02 Plus Postage.
 DESCRIPTORS *Administrative Organization; Administrative Personnel; Career Ladders; Career Opportunities; Educational Administration; Elementary Secondary Education; *Occupational Mobility
 IDENTIFIERS Michigan

ABSTRACT

An organization's employees can usually expect certain kinds of changes in their positions during the course of their careers. Careers usually begin in entry positions from which employees are promoted once sufficiently trained. Other positions are notable as positions for objective analysis of the employee's potential. Performance in such positions determines whether the employee advances in the hierarchy or is shunted off to a plateau position where little advancement can be expected or to an exit position from which the employee leaves the organization. A study of job histories over a five-year period (1968-73) for all of Michigan's public school employees except clerical and janitorial personnel permitted identification of public school career patterns. Supplemental data concerning the characteristics of the school systems and the populations of their districts helped in the description of these career patterns. Analysis revealed three basic career paths, described in some detail in this document. One path leads from the position of instructional/curricular supervisor through central office positions to the superintendency. A second path leads to the superintendency through secondary school administration. The third path leads to the principalship of the elementary school and rarely further. (Author/PGD)

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ORGANIZATIONAL CAREERS IN PUBLIC SCHOOL ADMINISTRATION

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January 12, 1978

To be presented at the 1978 annual meeting
of the American Sociological Association,
September 4-8, San Francisco, California.

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Organizational Careers in Public School Administration

The purpose of the research reported herein is to operationally define, identify, and describe career patterns found in public school administration. The concept of organizational career as an organizational phenomenon has been in the literature at least since Weber's discussions of bureaucracy, and though some good theoretical work was done during the 1950's (Becker and Strauss, 1956 and Martin and Strauss, 1959 for example), empirical investigation that captures the substantive richness of the theories is lacking. Early empirical work was largely in the form of case studies and participant observations (Dalton, 1959 and Janowitz, 1960 are good examples). This type of research was valuable in identifying some of the phenomena characteristic of organizational careers (the difference between generalist and specialist careers, the use of staff positions for poor performers, and the cumulative nature of training and socialization), but were of course plagued by the limitations of the methodology employed.

Some of the more recent work that has been done in the area demonstrates methodological sophistication but little relationship to the more substantive issues raised by previous authors (Vroom and MacCrimmon, 1968; White, 1969; Gillespie, et. al., 1976). This wave of research tends to use stochastic process models to predict future levels of position incumbency based on known probabilities of inter-position mobility. These are valuable tools for human resource planners, but hardly capture or test the substance of organizational careers.

In the area of public school administration with which we are concerned, most studies of careers are either confined to large urban school districts (Brown 1972) or focused on a single position, usually the Superintendency (Carlson, 1961; March and March, 1977). Because of this relatively narrow perspective much of the process of mobility is lost and we again lose the forest for the trees.

In the context of these gaps in research this study was undertaken with two goals; to identify career patterns in an entire administrative hierarchy and to do so in a way that bridges the gap between theory and methodology.

We will define the state school system as the focal organization and seek to identify and describe patterns of movement within the system. This definition of the organization is appropriate because so much of the environmental variability in the system of public education is accounted for by state and federal regulations and practices and because movement between districts in the state is enhanced if not encouraged by state-wide tenure and benefit policies. Thus district boundaries are very permeable and administrative action at the district level is likely to show consistency across districts, just as managerial action in semi-autonomous sub-units of a manufacturing firm would be likely to reflect parent company policy.

Our concern is with careers as an organizational phenomenon, as patterns of inter-position mobility controlled by the organization. Glaser (1968) suggests that the primary problems an organization must confront with respect to employees are turnover, job succession, and training. We would add motivation to participate and produce to this list, and go on to suggest that an organizational career is defined at least in part by the patterns of solutions to these problems devised by organizations. In other words, the career is designed to train the employee for future position incumbency and to motivate the employee to continue working in expectation of future status increments (Martin and Strauss, 1959; Sofer, 1970; McFarland, 1968). These patterns tend to take the form of sequentially ordered and related positions such that each position provides experiences deemed necessary for adequate performance in subsequent positions (Thompson, 1967; Becker and Strauss, 1956). Thus, the flow of people through an organization may be characterized as a relatively continuous process of socialization and training which enables the organization to maintain a sufficiently prepared supply of employees for its needs (McFarland, 1968;

Vetter, 1967; Levenson, 1961; Becker and Strauss, 1956; Friedman, 1969; Martin and Strauss, 1959; Sofer, 1970).

Organizational careers contain several types of positions, each contributing to the viability of the pattern. Each pattern has a small number of entry positions which describe the minimal level of competence or prior socialization and training required for entrance to the pattern. Career patterns also have plateau positions which serve as outlets for relatively poor performers, and exit positions from which people leave the career path and the organization. Exit positions define the ceiling of the career and help to provide relatively well-grounded expectations for career incumbents regarding their future prospects.

These careers are also marked by one or more "assessment positions," i.e. positions in which performance may be relatively objectively evaluated. A person's performance in such a position largely determines his or her future career pattern. Martin and Strauss (1959) discuss such positions as "nodes" from which several paths emerge, noting that the skills required to perform well in these node positions tend to be those that are required at higher levels in the organization. In other words, these assessment positions not only allow the incumbent to develop skills, but also allow the organization to observe the person's performance more closely and objectively, thus increasing the probability that capable people will be promoted to positions of greater responsibility.

Our task in this research is to identify and describe career patterns in public school administration. Using Goodman's log linear effect parameters we will identify pairs of positions that share a disproportionately large number of incumbents. These positions, when ordered by the direction of movement, will define our career patterns. Once connections between positions have been established we will describe the patterns in terms of the constituent positions and position incumbents.

Method

Data

The data used in this study are from the state of Michigan. Between 1968 and 1973 extensive records were kept concerning the public school districts in the state ($N = 520$) and the people employed therein. The data are of three types. The first and most important is job histories for the five year period for all state public school employees, save clerical and janitorial personnel. This data set includes present district of employment, current position, salary, highest educational degree attained, race, sex and age of each employee. The second data set, collected by the district, concerns characteristics of the school system in the district, including such variables as enrollment, student achievement, qualifications of professional staff, pupil/teacher ratio, and type and amount of financial resources. The last data set is derived from 1970 census data, aggregated to the district level. This data set provides measures of population characteristics such as size of the largest city, education of the adult population, and family income. The first data set, the job histories, will be used to identify career patterns. The other two data sets will aid in the description of these career patterns.

Analysis

We will identify career patterns in terms of positions changes made by individuals. Thus, our first task is to define a position change as a change in the assigned position code between any two years, excluding missing data. For example, if a person was present in years 1, 2 and 4 and missing during year 3, and the position assignment codes are identical for the three years in which we have data, no change is counted. If position in year 1 is different from position in years 2 and 4, one move is recorded. If position assignments are different in all three years, two moves are recorded. We have arbitrarily defined entrance and exit moves as two or more consecutive years of no information for the person.

Given this method of counting moves, we constructed a transition matrix with cell entries representing number of people moving from position a to position b during the five year period, and diagonal cell entries representing the number of people who did not change positions at any time during the period. Using this table as raw data, we then calculated Goodman's effect parameters for each cell (described below). These effect parameters indicate the extent to which there is more (or less) movement between any pair of positions than would be expected, given the marginal distributions of sending and receiving positions. The pattern of effect parameters identifies career patterns, or heavily travelled routes between positions.

Log-Linear Effect Parameters

Normally in contingency table analysis one is concerned with relationships between variables. One usually seeks a single statistic that describes the relationship between two or more variables in a contingency table. In the case of dichotomous variables, Goodman's log-linear effect parameters do precisely the same thing. The benefit of the Goodman system, however, is in its generalizability to polytimous variables. The investigator need not worry about the ordinality of a variable because Goodman's effect parameters allow the assessment of category to category relationships. Several recent articles by Goodman (1970, 1971, 1972a, 1972b) and others (Davis, 1972 and Reynolds, 1977) have described these techniques. We will summarize the relevant procedures, drawing primarily from the work of Davis in the discussion.

The method is analogous to analysis of variance. We may think of a cell in a two variable table as having four component parts that sum to the cell frequency; 1) a contribution from the sheer size of the table, 2) the appropriate row effect, 3) the appropriate column effect, and 4) the "interaction" between the appropriate row and column categories. In Goodman's system, the table total com-

ponent, MU, is the geometric mean of the cell frequencies. In logarithmic terms it is the mean of the logs of the cell frequencies (Rather than jump back and forth between cell frequencies and logs of cell frequencies, we will discuss the method in terms of logarithms only.). A row effect is the mean of the logs of the cell frequencies in that row minus MU, a column effect is similarly the mean of the logs of the cell frequencies in that column minus MU, and the interaction effect is the log of the focal cell frequency less the row, column, and MU effects. In a 3 by 3 table, the following calculations would generate an effect parameter for the top left hand (1,1) cell.

$$MU = (g_{11} + g_{12} + g_{13} + g_{21} + g_{22} + g_{23} + g_{31} + g_{32} + g_{33}) / 9$$

where g_{ij} is the log of the ij^{th} cell frequency

$$r_1 = (g_{11} + g_{12} + g_{13}) / 3 - MU$$

$$c_1 = (g_{11} + g_{21} + g_{31}) / 3 - MU$$

$$\lambda_{11} = g_{11} - (r_1 + c_1 + MU)$$

Lambda (λ_{11}) is the unstandardized effect parameter. To standardize the parameter so that it may be compared to others, one simply divides by the standard error of the parameter. Goodman gives the variance of the effect parameter as

$$s^2 = \sum \frac{a^2}{f}$$

where a is the value by which each cell in the table is weighted in calculating the effect parameter and f is each cell frequency. To derive the weights (the a 's) one simply substitutes the original equations for MU, r_1 , and c_1 into the equation given for Lambda.

In our 3 by 3 example the weights are 4/9 for cell 1,1, 2/9 for the other row and column cells (1,2; 1,3; 2,1; 3,1), and 1/9 for the remaining four cells. The standardized effect parameters may be interpreted as Z scores.

For this analysis the 25 positions in the administrative hierarchy in the public school districts were collapsed to nine positions. The criteria for collapsing were substantive similarity of

positions and minimal mobility between positions to be grouped together. The resulting nine positions, the average number of position incumbents during any one year, and the average salary associated with that position are given in Table 1.

Code	Position	Average Number Position Incumbents	Average Salary
1	Superintendent	420	\$20,108
2	Assistant Superintendent	201	20,172
3	Administrative Specialist ^a	436	18,311
4	Administrator of Instruction	183	18,741
5	Secondary School Principal	825	16,741
6	Elementary School Principal	1728	15,730
7	Assistant Principal, Secondary	692	15,533
8	Assistant Principal, Elementary	267	15,132
9	Instructional/Curricular Supervisor ^b	980	14,769

^aIncludes Administrators of Business, Plant and Facilities, Employed Personnel, and Special Education.

^bIncludes Consultants, Coordinators, and Supervisors of subject areas and school levels.

Results and Discussion

Table 2 shows the raw inter-position mobility data from which career patterns were identified. Two regularities in these data are immediately apparent. The first is that over the five year period, public school administrators are relatively immobile. A majority of administrators do not change positions (64.8 percent). This is consistent with the findings of others relative to mobility rates among public school administrators (Brown, 1972; Carlson, 1961). Remembering that this table excludes persons who moved between administrative and teaching positions during the period, these data suggest that public school administrators are a fairly position-stable group of people, changing positions on the average, every 15 years or so. Note further that these data mask movement between

		Position 2										
		1	2	3	4	5	6	7	8	9	EXIT	Total
Position 1	1	347	13	7	2	7	11	0	0	2	83	472
	2	34	114	23	5	5	8	2	0	3	36	230
	3	14	26	277	14	11	27	6	3	15	99	492
	4	13	24	12	94	12	9	8	1	14	45	232
	5	40	18	17	10	605	31	32	1	12	126	892
	6	7	21	14	16	32	1463	16	5	16	288	1878
	7	5	8	9	1	160	40	380	4	15	97	719
	8	0	0	3	3	5	93	12	168	1	42	327
	9	1	12	17	33	7	22	71	10	568	212	953
Total		461	236	379	178	844	1704	527	192	646	1028	6195

Table 2: Raw Inter-position Mobility Data

districts, within position. This type of movement occurred infrequently. There were 138 such inter-district, intra-position moves, or 3.4 percent of the total number of position stable persons. Analysis of these inter-district, intra-position moves identified no systematic patterns of district characteristics between which these moves occurred. It was thus concluded that this type of mobility plays a negligible role in the development and maintenance of career patterns in public school administration.

The second regularity observed in Table 2 relates to the rather high proportion of moves that involve an exit. Overall, we observe 2179 intra-position moves, 1028 or 47.2 percent of which are exits. We see, for example, that people beginning as Administrative Specialists (code 3) are more likely to leave the system ($n = 99$) than to move to another position within the system. There are two exceptions to this trend; movement out of the Assistant Elementary Principal position (code 8) and movement out of the Assistant Secondary Principal position (code 6). In both cases more people moved to the appropriate Principal position than exited.

Table 3 gives the standardized effect parameters for the frequencies presented in Table 2 (these parameters may be thought of as Zscores). The parameters indicate "connectedness" between positions, controlling for marginal distributions. A positive value suggests more than the expected level of movement between two positions while a negative value suggests less than the expected level.

To simplify interpretation, we have taken all of the significant positive effects and summarized them and their relationships with each other in Figure 1. Because Table 3 clearly indicates direction of movement we have drawn Figure 1 with this direction and with some notion of hierarchical level imbedded in the pattern. Put more simply, Figure 1 represents the identified administrative career patterns in our data set (the number in parentheses on each path is the effect for the path from Table 3).

There are three patterns of mobility identified by the data. The first leads to the Superintendency paths a, b and d. This may be thought of as a specialist career pattern in instruction and

Position 1

	Position 2									
	1	2	3	4	5	6	7	8	9	EXIT
1	15.208 ^b	2.205 ^a	-.027	-.982	-.677	-1.133	-2.179 ^a	-1.014	-1.430	3.020 ^b
2	6.002 ^b	11.050 ^b	3.617 ^b	.039	-2.031 ^a	-2.739 ^b	-2.021 ^a	-1.216	-1.452	-1.701
3	-.131	1.472	18.215 ^b	.545	-3.330 ^b	-2.937 ^b	-2.749 ^b	-.602	-.148	-1.598
4	.911	2.438 ^b	-.694	12.526 ^b	-1.593	-4.312 ^b	-1.041	-1.094	-1.036	-3.660 ^b
5	3.098 ^b	-.977	-2.944 ^a	-1.438	20.017 ^b	-3.575 ^b	1.497	-1.999 ^a	-1.799	-1.627
6	-3.094 ^b	-.982	-3.309 ^b	-.440	-1.247	27.130 ^b	-1.673	-.542	-1.441	4.568 ^b
7	-2.427 ^a	-2.234 ^a	-2.705 ^b	-3.118 ^b	11.198 ^b	-.700	14.949 ^b	-.012	.018	-1.255
8	-1.979 ^a	-2.172 ^a	-1.474	-.300	-1.213	7.539 ^b	2.226 ^a	14.200 ^b	-1.799	.305
9	-3.747 ^b	-2.154 ^a	-1.954	3.449 ^b	-4.824 ^b	-4.732 ^b	5.318 ^b	1.577	19.558 ^b	2.629 ^b

^a_p < .05, two-tailed test

^b_p < .01, two-tailed test

Table 3: Standardized Effect Parameters for
Inter-Position Mobility

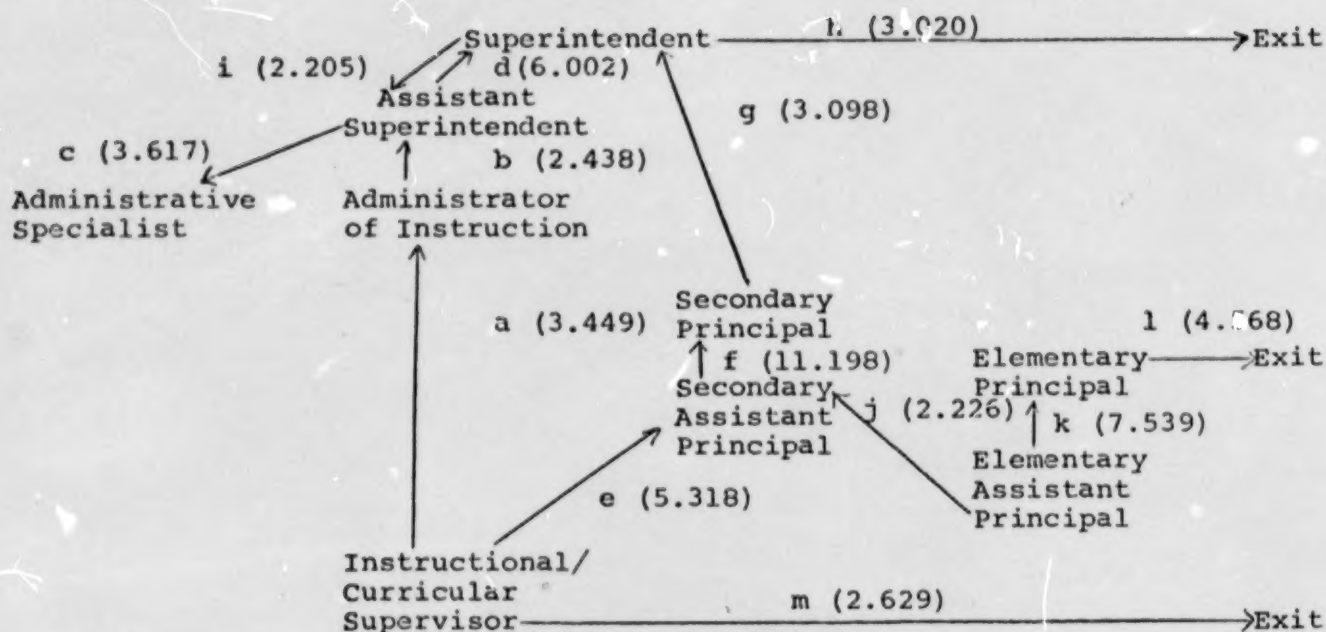


Figure 1: Career Patterns in Public School Administration

central office administration. The second pattern is via paths e, f and g to the Superintendency, a pattern through school unit or teaching supervision. The third pattern is only weakly connected to the Superintendency via path j. Its more realistic peak is Elementary School Principal (path k). We will discuss each of these patterns in more detail after noting a few other general characteristics of the patterns.

As suggested above, there are two ceiling positions indicated by the data, Superintendent and Elementary Principal. Clearly the routes to the former position occupy more hierarchical levels and represent greater remunerative rewards for the persons traveling through them than does the route to Elementary Principal. The larger career patterns also show two plateau or demotion moves, paths i and c.

There are also three exit positions, or positions from which exits are significantly more likely to occur than expected. These exit positions are the two ceiling positions, Superintendent and Elementary Principal, and the lowest level administrative position, Instructional/Curricular Supervisors. Note that these are not exits to teaching but rather, exits to outside the public school system. A full analysis of mobility between teaching and administration is beyond the scope of this paper. For our present purposes it is sufficient to note that there is considerable movement into both elementary administrative positions, the Secondary Assistant Principal position and the Instructional/Curricular Supervisor from teaching.

Finally, we observe what appear to be two assessment positions, the lowest position (Instructional/Curricular Supervisor) and the Assistant Superintendency. The former is the first administrative position for many moving through these patterns. It represents a substantive break in job content, and as seen in Figure 1, has many paths leading from it, including a strong connection to an exit move. The second assessment position may be thought of as a testing ground for the Superintendency. Poor performers from this position are not dismissed. Rather, they are plateaued or demoted (path c). As we shall see in a moment there are possibly two paths leading from the Assistant Superintendency to the Superintendency, one between districts travelled by adequate performers and one within a single district travelled by superior performers.

Let us look at each of these three patterns in more detail.

Instruction and Central Office Administration

This route, following paths a, b and d, begins with a position requiring the development of specialist skills in the primary mission of a public school system, educating the pre-adult population. This position is often, but not always, combined with teaching and involves supervision of the content of education, not the action of teaching. It is an assessment position from which people move in

several directions. It may also be a plateau position for some people. The effect parameter for stationarity in this position is the third highest in Table 3 ($Z = 19.558$, cell 9,9), indicating a strong tendency for people not to move out of the position. Additional evidence for the dual function postulated for this position derives from the characteristics of people who exit from this position (path m). These people are significantly less well educated, significantly older, significantly less well paid and significantly more likely to be females than Instructional/Curricular Supervisors as a whole. Those who move upward to Administrator of Instruction, in contrast, do not differ from their source group in any way save salary. Movers are paid more, on the average, than the source group as a whole.

The next position in the career pattern is Administrator of Instruction. This position is the first central office administrative position in the career path. The lower level specialists often combine their coordination or supervisory administrative responsibilities with classroom teaching. The Administrator of Instruction, however, is not involved with classroom teaching but is solely occupied with administrative responsibilities. Thus movement between the two positions often represents a complete break from teaching and commitment to administration. This move also represents the largest difference in average salary between adjacent positions (\$14,769 versus \$18,741), further reflecting the qualitative difference in positions.

The Administrator of Instruction position builds upon the training and experience generated in the lower level supervisory position. It is the position that represents total removal from the activity of teaching, focusing instead on the development of administrative skills which will be valuable at higher levels in the organization.

As we look at those who move out of the Administrator of Instruction position into the Assistant Superintendent position (path b) we find that the only significant difference between movers and all position incumbents is salary, the movers making, on the average, \$20,858. Interestingly, the movers have an average age of 42 while

the average Administrator of Instruction is 45. Though this difference does not allow us to reject the null hypothesis that there are no differences in age ($t = -1.932$, .23 degrees of freedom, $.05 < p < .1$), the difference is suggestive of the age grading in career paths to which Becker and Strauss (1956) and others refer. That is, not only are career paths characterized by a sequence of positions through which persons move, they are also characterized by age gradings that constrain the range of possible moves open to incumbents in such a way that career paths do not become "blocked."

There is a similar tendency with respect to sex. The people who move from Administrator of Instruction to Assistant Superintendent are 95.8 percent male, while the pool from which those movers are drawn is but 80.2 percent male. This difference does not allow us to reject the null hypothesis of no difference, ($Z = 1.918$, $.05 < p < .1$), though it is consistent with the trend for higher level positions to be predominantly male.

Hughes (1945) argues that persons with inappropriate "auxiliary" characteristics tend not to hold visible, central discretionary positions in organizations. Given the large number of women teachers in public school education it would be difficult to argue that women would be inappropriate curriculum supervisors or instructional supervisors. However, for higher level policy positions, the domain of men across many occupations, "femaleness" probably becomes an inappropriate auxiliary characteristic if for no other reason than the people with whom the Assistant Superintendent interacts are much less likely to be classroom teachers and more likely to be administrators and managers in many types of organizations, most of whom will be males. Thus we observe what appears to be a trend toward filtering in higher level positions, or the tendency for these positions to become predominantly male.

Qualitatively the move from Administrator of Instruction to Assistant Superintendent represents another level of generalization and broadening of skills. By now the person moving into the Assistant position has had experience (and presumably developed some expertise) in instructional administration. Movement into the Assistant Superintendency allows the person to extend his or her

range of competencies by dealing with a variety of administrative matters, often acting as the Superintendent in his or her absence.

Out of the Assistant Superintendent position we have identified two significant paths traveled by administrators, the path to the top position (path d) and the demotion or lateral path to Administrative Specialist (path c). People who travel the latter route are not significantly different from the average Assistant Superintendent in any respect, though there is some tendency for them to be older and less well paid. Compared to those who move via path d to the Superintendency they are somewhat older, but otherwise not different from their more successful counterparts (average ages are 44 and 48, $t = 1.896$, d.f. = 49, $p = .06$). As others have suggested (Goffman, 1952; McFarland, 1968) plateauing and demotion tend to be cloaked in ambiguity to make the move more acceptable to the person experiencing the status change. Thus we would not expect to see large differences in salary when comparing upward movers to lateral or downward movers at this level in the hierarchy, though given more data we would expect to see a slower rate of increase in salary for the less successful administrator. It may also be argued that any filtering with respect to ascribed or "auxiliary" characteristics that may take place with movement through the career path has already taken place by the time persons reach the Assistant Superintendent level (the Assistant Superintendents are 96 percent male and 93.1 percent white), thus any differences between people following different routes at this level must be minor.

Up to this point movement through this career pattern is almost exclusively intra-district. Of the 80 moves represented by paths a, b and c 76 (95 percent) are within predominantly large urban districts. However, 11 of the 34 moves from Assistant Superintendent to Superintendent are between districts. This phenomenon suggests a possible difference between intra- and inter-district moves. Those who move between districts are likely to have moved to a smaller, less urban, less complex, poorer district with lower achieving students (though the differences are not statistically significant),

suggesting that larger districts may serve in a training capacity, keeping the best performers and sending moderately good performers to districts in which the Superintendency may not be as demanding.

Finally we consider the moves out of the Superintendency. The people who leave the school system from the Superintendency (path h) are significantly older and less well paid than the average Superintendent, suggesting retirement and/or poor performance, but there are no differences between those who leave the system and those who experience a lateral or demotion to the Assistant Superintendent position (path i). Given the relatively high average age of persons traveling path i (53), we cannot argue that this move is for broadening or training purposes. About 70 percent of these moves take place within relatively large but otherwise average districts, suggesting a terminal lateral move. The other 30 percent that involved inter-district movement show no differences between sending and receiving districts, thus further supporting the argument that this is not a broadening or training move.

Secondary School Supervision

The second route to the top of school district administration is through supervision of the instructional process in the school. This supervisory route begins with the same position as did the first path, but moves to Secondary School Assistant Principal, then to Secondary School Principal and from there to the Superintendency.

The lower level moves of this career pattern are most likely to occur in large districts for reasons already stated. Interestingly the first path in this career is followed almost exclusively by highly educated, young males, many of whom are non-white. Over 83 percent of those following path e are males, and almost 40 percent are non-white (the total sample is 79.6 percent male and 91.2 percent white). Over 97 percent have a Master's degree or better, compared to a sample proportion of 89.7 percent. It would appear that this move provides the primary route into public administration for non-whites, and though the receiving position is not nearly as non-white as the path into it (because of numerous white teachers

moving directly into the Assistant Principal position), the position is still significantly more likely to be occupied by a non-white than we would expect. Given that this type of movement is most likely to occur in large urban school districts with a relatively large proportion of minority students, we would argue that this finding represents an attempt to match the race of the Assistant Principal with the race of a majority of the students in the school.

The next move in this career path is from Assistant Secondary Principal to Secondary Principal. As noted before, the Assistant position is disproportionately filled with non-whites. It is also a very young and male position, much more than the prior position, and a relatively highly educated position, 91.9 percent of the incumbents having a Master's degree or more. Those who move from the Assistant position to the Principal's position, compared to all Assistant Secondary Principals, are more likely to be male, less likely to be white, and likely to make more money. Again, we see this path as the route of upward mobility for non-whites and not a route for women. The movers are similar in age and education to the pool of all Assistant Principals. This move is also most likely in large urban school districts.

Because of movement directly from teaching into the Secondary Principal position in smaller districts, the position of Secondary Principal does not reflect the racial composition of those who have moved into the position through the identified career path. The position is 94.6 percent white, significantly more white than the population of administrators. Similarly, the position is also almost entirely male (96.4 percent) and almost all incumbents have an advanced degree. The characteristics of the position incumbents are very similar to those of Superintendents, thus any filtering that might occur based on "auxiliary" characteristics has been accomplished at this point. Those who move into the Superintendency from this position are no different from the pool as a whole. Though movement through the lower ranks is a very real possibility for non-whites, the route to the very top all but excludes non-whites.

The qualitative justification for this sequence of positions is easily understood. The Secondary Principal's job involves many of the same tasks as the Superintendent's. A Secondary Principal often supervises curriculum, always supervises the teaching staff, must deal with parents and interested others, and usually plays a significant role in budgeting and budget management. Thus incumbency in the position is seen as adequate preparation for the Superintendency, as the skills mastered in the Principal's office are relevant for performance in the Superintendent's office, particularly in smaller districts. When this type of move also involves a change in district (as was the case about 25 percent of the time) the sending districts tend to be larger and more complex than the receiving districts. In other words, the Secondary School Principal position in large complex school districts provides a good set of training experiences for persons moving to the top position in smaller, less complex districts. When the move takes place within a district it is similarly more likely to occur in small, rural, relatively poor districts, suggesting a specification by size of district in the type of experience deemed appropriate for incumbency in the highest level position.

Path Through Elementary Education

The last career path that we have been able to identify does not lead to the Superintendency, at least not very directly. It begins with Assistant Principal in an Elementary School and primarily moves to Elementary School Principal (path k), though there is some chance for persons to move from Elementary Assistant Principal to Secondary Assistant Principal (path j). Elementary Principal represents the top position in the career pattern. There are no connections between this position and others in the school districts, but there is a very strong "connection" with an exit move.

The most obvious fact about the incumbents of positions in this career path is that they are disproportionately likely to be women. Almost 44 percent of all Elementary Assistant Principals are women, and over 28 percent of all Elementary Principals are

women (the entire sample is about 20 percent female). The exception to this trend, if it may be called an exception, is the proportion women in the third position, Secondary Assistant Principal. In many respects this position is not best thought of as "part" of the Elementary Education career path. Rather, it is more accurately characterized as the door through which a few persons travel from one career path to the others. The Secondary Principal position is disproportionately male, and in this data set, movement into that position from the Elementary Assistant Principal position is entirely male, occurring within large urban districts. We also find a relatively large proportion of non-whites in parts of this career pattern, not unlike our previous results. Movement through the Assistant Elementary Principal position to the Elementary Principal position is more likely to occur in large urban school districts, while movement directly from teaching into the Principal position is most likely to occur in smaller more rural districts largely because the Assistant position does not exist in smaller districts.

We have noted that the Elementary Principal position is a terminal position in this short career path. This conclusion stems from the fact that (a) there are no significant connections leading out of this position to any other position in the system, (b) there is a very strong connection between this position and an exit move (diagonal effect parameter = 4.568 from Table 3) and (c) this position shows more stationarity than any other position in the system (diagonal effect parameter = 27.130 from Table 3). The people who leave the system from this position during the period of time studied were rather different from the average position incumbent. They were much more likely to be female (47.6 percent of the leavers were female, while only 28.2 percent of the position incumbents are female), less likely to have a Master's degree (only 79.9 percent had a Master's degree, compared to 88.6 percent of all Elementary Principals), considerably older on the average than their peers (54 years old versus 45), and significantly less well-paid. These groups, like those who left the system from the Super-

intendency, are likely to be retiring from a rather lengthy career in public school education.

One might ask why we find such a strong separation between Elementary School Principal and the Superintendency when we found such a strong connection between Secondary School Principal and the Superintendency. There are several explanations for this observed difference. First, the task requirements of Elementary Principal are not as complex as those for Secondary Principal. The Elementary Principal has a smaller number of students (and parents), a smaller staff, a less differentiated staff and a less complex curriculum to supervise. Moreover, as a large proportion of Elementary Principals (and Elementary Teachers) are female, one might speculate that this position does not connect to the top for reasons that have to do with non-task related factors such as discrimination based on gender on the part of the district and/or personal career aspirations on the part of the position incumbents. Given what we do know about the task requirements of the two positions, it is certainly reasonable to assume that the position of Elementary Principal does not prepare the incumbent for a promotion to Superintendent nearly as well as a Secondary Principal position.

Summary and Conclusions

We have identified and described three different patterns of mobility through public school administration. Two of these patterns lead to the top of the public school hierarchy and one pattern is isolated from the top of the hierarchy. The first pattern moved through positions involving increasing levels of sophistication in curriculum and instructional planning and supervision, broadening at the Assistant Superintendent level, and finally moving to the Superintendency. This pattern, particularly at lower levels was most likely to be found in large school districts and below the Assistant Superintendent position, was disproportionately likely to involve moves that did not cut across district boundaries. The people moving through this career pattern became increasingly white and male with at least a Master's degree as hierarchical level of position increased.

The second career pattern moved through positions involving supervision of the school unit. These positions are in secondary school management and lead directly to the top of the organization. This path, again was most likely to occur in larger districts at the lowest levels, and the people moving through these positions were disproportionately likely to be non-white up to the Secondary Principal's position. Women were largely not found moving through this pattern.

The third pattern, the one that is substantially isolated from the Superintendency, is in elementary education. It is in this pattern that we find a large proportion of women in both positions and non-whites in the starting position. It is only in the larger school districts that this career path is apparent, and in which an Assistant Principal position incumbency may be a prerequisite for movement in the Elementary Principal's position. In smaller districts Assistant Principals are not present and the source position for Elementary Principal is teaching.

In more general terms this research has demonstrated that patterns of inter-position mobility in an entire administrative hierarchy can be empirically identified from a relatively constrained set of job histories. Certainly one would want to compare the identified career patterns to a sample of longer job histories to lend validity to the findings. Nevertheless, this identification by itself is valuable for the manager or administrator as a tool in human resource planning, training and evaluation. Knowing empirically which positions have trained current position incumbents can aid the administrator in understanding strengths and weaknesses in their employees as well as aid in the planning of training programs for the future and evaluating the probability of future high quality performance in lower level administrators. Understanding the links between positions can aid the young manager or administrator in making decisions regarding job or career. In our data, for example, people who want to become Administrators of Instruction would be well advised not to prepare for a career in elementary education. The probability of movement from Elementary School Principal to Administrator of Instruction is much too small to

make this a realistic aspiration.

Finally, this sort of analysis can help us to understand the stratification process in an administrative hierarchy. If we are at all serious about increasing the number of women in high level administrative positions, the last plan to undertake is one that increases the number of Elementary School Principals. Nor may it be very realistic to promote women into Secondary Assistant Principal positions, given the overwhelming domination of men in these positions.

In sum, these findings not only teach us something about mobility processes in an organization, but can serve as a valuable tool for managers and administrators involved in human resource planning, training and evaluation.

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